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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,741	11/21/2001	Farhad Boloorchhi	DP-305668	3330

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EXAMINER

LUM, LEE S

ART UNIT

PAPER NUMBER

3611

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,741

Applicant(s)

BOLOORCHI ET AL.

Examiner

Ms. Lee S. Lum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 21-27 is/are rejected.
- 7) ☒ Claim(s) 4,12,21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: copy of paper #5 Interview Summary

DETAILED ACTION

1. An Amendment was filed 1/21/03.
2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The spec does not describe an "assist controller" nor "variable assist".

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-12 and 16-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 6, last line, and Claim 27, second-to-last line, "error signal" lacks sufficient structure, i.e.; it is unknown what element emits the signal.

In Claims 7 and 9, "an error signal" is unclear because it is unknown if this signal is the same established in Claim 6, or is another "error signal". If the former, then "an" should be "the". If the latter, this particular "error signal" lacks sufficient structure (again, it is unknown what element outputs this signal).

In Claims 7, 10 and 11, this same issue exists with both "gains" – highpass and lowpass; it is unclear if these are the same gains established in Claim 6.

In Claims 10 and 11, "a highpass gain" and "a lowpass gain" are unclear because it is unknown if these are the same "gains" established in Claim 6.

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In Claim 16, "feel back torque" is unclear because this element/value lacks sufficient structure, i.e., no element is provided that measures, or otherwise, accounts for this characteristic, much less the controller.

In Claim 21, "highpass/lowpass gain" are unclear because these terms are unknown in the art. Perhaps the recitation was meant to recite "gain applied to the portion of the signal passed through a highpass/lowpass filter, respectively". The latter part of Claim 23 also contains this error.

In Claim 23, "a summing function...for providing an input to a highpass gain function" is unclear because two functions/implied components are provided – an adder and an amplifier (gain) – which are then combined into one operation – "providing an input to...". Also, the claim is appended with instructions to the Office.

In Claim 24, an "assist controller" is unclear because this element is not described in the spec nor drawings.

In Claim 25, "variable assist" lacks sufficient structure (and is not described in the spec).

Claim 26 lacks a concluding period.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4A(1). **Claims 1, 6-11, 13 and 27** are rejected under 35 U.S.C. 102(e) as being anticipated by Kaufmann et al 6370460.

Re **Claim 1**, Kaufmann discloses a method for controlling a feedback torque of a motor comprising

Receiving a signal indicative of a difference between desired and actual motor positions (col 3, lines 41-45; "road wheel command signal...[is] compared with a road wheel position signal"),

Filtering the signal into frequency bands (inherent in "frequency-based compensator", element 39, in col 3, lines 2-4), and,

Applying a gain (col 3, lines 2-4, "at sufficient gains") at least one of the bands in correspondence with the received signal.

As best understood, re **Claims 6 and 27**, the patent further discloses a controller for an active steering system comprising

A feel control algorithm (unidentified, executed by controller 12) comprising a filter (inherent in element 39, "frequency-based compensator"),

and either a highpass, or lowpass, gain (col 3, lines 2-4),

Wherein either gain corresponds to an error signal (as best understood).

As best understood, re **Claims 7-11**, the patent further discloses the recited elements.

Re **Claim 13**, the patent discloses the recited elements as discussed above, wherein the application of a gain is executed to provide a motor command (via unit 42).

4A(2). Claims 16, 17, 21, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Phillips 6370459.

As best understood, re **Claims 16 and 17**, Phillips discloses an active steering system 710, depicted in figs 1/2, comprising

Input device 172,

Differential actuator 722 (col 24, lines 35-37) communicating with the input device,

Steering actuator 12 communicating with the differential actuator,

Controller 32a, and connected to all three elements for controlling a feedback torque to the operator,

Motor 26 communicating with the controller, and,

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Differential unit 722 disposed relative to the motor, input device, and differential actuator.

As best understood, re **Claims 21, 24 and 25**, the patent discloses the recited elements.

4B. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 15 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuzuya et al 5859774.

Re **Claim 14**, Kuzuya discloses a method of actively controlling the steering of a vehicle comprising

Receiving operator input (via the steering wheel 19 and front steering mechanism 10),
Receiving dynamic stability input of the vehicle (via sensors 17/18/20-24),
Calculating correction signal (col 7, lines 10-12) according to the inputs,
Filtering the signal into a plurality of frequency bands (fig 4, step 104, and col 8, lines 24-26),
Applying gain (col 7, lines 17-19) to at least one band to produce an output signal, and,
Adjusting an input to a differential actuator AC (col 5, lines 19-21) according to the output signal.

Re **Claim 15**, the patent further discloses the adjusting as comprising

Providing the output signal to electric motor 12 in order to adjust a steering angle of a steering actuator (same, col 6, lines 27-30).

Re **Claim 26**, the patent discloses an apparatus for actively controlling vehicle steering as discussed above.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5A. **Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann in view of Phillips 6370459.

Kaufmann does not disclose the motor as disposed relative to a differential, while Phillips shows differential 722 (col 24, lines 35-36, "gear reduction means"). It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this element, as shown in Phillips, to provide further assistance to the steering system.

5B. **Claims 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann in view of Kuzuya et al 5859774.

Kaufmann does not specify the gain as scheduled/variable, while Kuzuya shows this element in col 7, lines 18-19; "proportional gain". It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this manipulation, as shown in Kuzuya, as a step in processing the signal towards particular results. This feature is very well-known in the art.

5C. **Claims 12, 22 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann in view of Kurishige et al 6450287.

Re **Claims 12 and 22**, Kaufmann does not specify a type of filter applied to the signal, while Kurishige exemplifies a (lowpass) filter in element 15S (col 12, lines 9-14), as a portion of signal processing in the invention. It is extremely well-known in the art of signal processing to apply various filters to the raw signal to extract desired components. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include a type of filter, as shown in Kurishige, as a portion of signal processing in the system.

As best understood, re **Claim 23**, Kaufmann discloses the recited elements.

6. **Claims 18-20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **RESPONSE TO REMARKS**

Moot in light of new rejections. An Interview Summary is attached to this Office Action, in which Examiner discussed 112/2nd issues (raised in the previous Office Action) with attorney T. Montaine on 1/13/03. Some of these issues were resolved in the Amendment, however, the attorney is asked to note new ones as provided above, in addition to those not addressed in the Amendment.

8. **Communication with the Examiner and USPTO**

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, 9 am-6 pm, M-F. Our fax numbers are (703) 872-9326, 872-9327 for after-final communications, and 308-2571 for faxes with prior notice given to the examiner. Any inquiry of a general nature, or relating to the status of this application/proceeding should be directed to Customer Assistance at (703) 306-5771.

Ms. Lee S. Lum
Examiner
3/3/03




Lesley D. Morris
Primary Examiner